5.2 - Air Quality

5.2.1 - Introduction

This section describes the existing air quality setting and potential effects from project implementation on the site and its surrounding area.

5.2.2 - Regulatory Setting

The regulatory setting of the proposed project includes the regulatory entities that have jurisdiction over air quality in the region of the project site, and the air quality standards, including greenhouse gas standards, that pertain to the project. In order to put those standards and the project-specific analyses into context, this section first presents a discussion of the air pollutants of concern to the region.

Air Pollutants

There are a number of air pollutants that are of concern in California. Six common air pollutants, called criteria air pollutants, were identified by the US Environmental Protection Agency as a result of provisions of the Clean Air Act of 1970. The six criteria pollutants are ozone, particulate matter (PM_{10} and $PM_{2.5}$), nitrogen dioxide, carbon monoxide (CO), lead, and sulfur dioxide; volatile organic compounds, are also of concern as ozone precursors, although they are not, technically, criteria pollutants. The State of California identified four additional air pollutants of concern, namely visibility reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. Through the toxic air contaminants (TAC) program the State has also identified some 200 trace contaminants that pose health risks; the most prominent of those is diesel particulate matter (DPM). Finally, the State has recently identified six greenhouse gases that are of concern because of their role in climate change.

- **Ozone** is primarily the result of photochemical reactions in the atmosphere involving a number of ozone precursor compounds, including volatile organic compounds (VOCs) and oxides of nitrogen (NOx). Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem, and because it forms in daylight and degrades at night, its concentrations can vary substantially over the course of a day. Even in pristine areas, some ambient ozone forms from natural emissions that are not controllable. This is termed background ozone. The average background ozone concentrations near sea level are in the range of 0.015 to 0.035 parts per million (ppm), with a maximum of about 0.04 ppm. Ozone is considered a regional pollutant because it can develop well downwind of the site of precursor emissions.

  Even at very low levels, ground-level ozone triggers a variety of health problems, including aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses like pneumonia and bronchitis. Symptoms of ozone exposure include wheezing, coughing, pain when taking a deep breath, and breathing difficulties during exercise or outdoor activities. People with respiratory problems are most vulnerable, but anyone who spends time outdoors in the summer is at risk, particularly children and other people who are more active outdoors.

Ozone also damages vegetation and ecosystems, leading to reduced agricultural and commercial forest yields, and increased susceptibility to diseases, pests, and other stresses. In the United States alone, ozone is responsible for an estimated $500 million in reduced crop production each year. Ozone damage to foliage affects the landscape of cities, national parks and forests, and recreation areas. In addition, ozone causes damage to buildings, rubber, and some plastics.

- **Reactive Organic Gases (ROG)**, also known as **Volatile Organic Compounds (VOCs)**, are defined as any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, that participates in atmospheric photochemical reactions. Low molecular weight hydrocarbons found in vehicle fuels are an example of VOCs.

  It should be noted that there are no state or national ambient air quality standards for VOCs because they are not classified as criteria pollutants. They are regulated, however, because VOCs undergo chemical reactions that contribute to the formulation of ozone. VOCs are also transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} levels and lower visibility. The health effects associated with ozone (as discussed above) are also indirect health effects associated with significant levels of VOC emissions.

- **Nitrogen oxide (NO_x)** is produced during combustion of fossil fuels as oxygen reacts with atmospheric nitrogen and nitrogen oxides at high temperatures. NOx is a concern because, like VOCs, it is an ozone precursor. NOx can also be a precursor to PM_{10} and $PM_{2.5}$. Because NOx is an ozone precursor, the health effects associated with ozone (as discussed above) are also indirect health effects associated with significant levels of NOx.

- **Suspended particulate matter (PM_{10} and $PM_{2.5}$)** is a mixture of small particles consisting of dry solids, droplets of liquid, and solid cores with liquid coatings. Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye. Others are so small they can only be detected using an electron microscope. Particulate pollution includes "inhalable coarse particles," with diameters between 2.5 and 10 micrometers, and "fine particles," with diameters that are 2.5 micrometers and smaller (2.5 micrometers is approximately one-thirtieth the diameter of the average human hair).

  These particles can be made up of hundreds of different chemicals. Some particles, known as primary particles, are emitted directly from a source, such as construction sites, unpaved roads, fields, smokestacks, or fires. Others form in complicated reactions in the atmosphere from chemicals such as sulfur dioxides and nitrogen oxides that are emitted from power plants, industrial activity, and vehicle engines. These particles, known as secondary particles, make up most of the fine particle pollution in the United States.

  Exposure to particulate matter can lead to a variety of health effects. Numerous studies link elevated airborne particulate concentrations to increased hospital admissions and emergency

room visits and to increased deaths from heart or lung diseases. Both long- and short-term particle exposures have been linked to health problems. Long-term exposures are associated with problems such as reduced lung function, chronic bronchitis, and premature death. Short-term exposures (hours or days) can aggravate lung disease, causing asthma attacks and acute bronchitis, and may increase susceptibility to respiratory infections. In people with heart disease, short-term exposures have been linked to heart attacks and arrhythmias. Healthy children and adults have not been reported to suffer serious effects from short-term exposures, although they may experience temporary minor irritation when particle levels are elevated.

- **Carbon Monoxide (CO)** is a colorless, odorless gas that is formed when the carbon in fuel is not burned completely. Motor vehicle exhaust contributes about 56 percent of all CO emissions nationwide, and non-road engines (such as construction equipment and boats) contribute about 22 percent. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes, forest fires, and many residential uses.

  CO is a public health concern because it reduces the blood's ability to transport oxygen. Lower levels of CO threaten those who suffer from heart-related diseases as angina, clogged arteries, or congestive heart failure. High levels of CO can affect even healthy people, inducing vision problems, reducing the ability to work or learn, and reducing manual dexterity and reasoning power. At very high levels, CO can cause death.

  CO is considered to have only a local influence because it dissipates quickly. High CO levels develop primarily during winter, when periods of light winds combine with the formation of ground-level temperature inversions to reduce mixing and dispersion. High CO concentrations occur in areas of limited size, sometimes referred to as hot spots, that are strongly associated with roadways with high traffic volumes and congestion, active parking lots, and tunnels.

- **Sulfur dioxide and sulfates (SOx)** are emitted during the combustion of petroleum-derived fuels (i.e., gasoline and diesel fuel) that contain sulfur. During combustion, sulfur is oxidized to sulfur dioxide (a colorless pungent gas), which is rapidly converted to sulfate compounds in the atmosphere. In addition to being smog precursors, sufur oxides are a cause of acid rain, contribute to corrosion of structures, and can affect cardiopulmonary function.

- **Lead** is a former a gasoline additive, which caused it to be released to the atmosphere in large quantities. Atmospheric lead concentrations in southern California urban areas have not exceeded air quality standards for at least 10 years, largely because it is no longer an additive in gasoline. Lead is not assessed in this analysis.

- **Visibility reducing particles** consist of a variety of particle types. Visibility is the distance through the air that an object can be seen without the use of instrumental assistance. Visibility reducing particles are not assessed in this analysis; however, particulate matter is assessed.

- **Vinyl chloride** is an ingredient in the manufacture of polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride is not assessed in this analysis because the proposed project is not expected to generate or be exposed to vinyl chloride.

- **Hydrogen sulfide** is a flammable, colorless, poisonous gas, with a smell like rotten eggs, that comes from the combustion of sulfur containing fuels (oil and coal), the putrefaction of organic matter, and releases from a variety of manufacturing process. Because hydrogen sulfide would not be generated on or near the project site, it is not assessed in this analysis.

- **Toxic Air Contaminants (TACs)** are defined as air pollutants that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, their high toxicity may pose a threat to public health even at very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts are not expected to occur. This contrasts with the criteria pollutants for which acceptable levels of exposure are reflected in the state and federal government ambient air quality standards.

  Since the 1960s, the criteria pollutant control program has been effective at reducing TACs, since many volatile organic compounds and PM constituents are also TACs. During the 1980s, however, in response to increased public concern, the California legislature enacted the Toxic Air Contaminant Identification and Control Act. This law charges the California Air Resources Board (CARB) with the responsibility for identifying substances as TACs, setting priorities for control, adopting control strategies, and promoting alternative processes. The CARB has designated almost 200 compounds as TACs, the most prominent of which is diesel particulate matter (see below), and has promulgated control strategies for a number of TACs.

- **Diesel Particulate Matter (Diesel PM)** emitted from diesel-fueled engines was identified by the CARB as a TAC in August 1998. Diesel engine exhaust has been identified as a carcinogen, and most researchers believe that diesel exhaust particles (as opposed to gaseous components) contribute the majority of the cancer risk.

  In California, on-road diesel-fueled vehicles contribute approximately 40 percent of the statewide total and other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units contribute an additional 57 percent. The remaining three percent comes from stationary sources, primarily manufacturing, heavy construction (except highway), and power generation.

- **Greenhouse Gases** trap heat in the atmosphere, analogous to the way a greenhouse retains heat. The accumulation of greenhouse gases in the atmosphere regulates the earth's temperature to be suitable for life. In 2006 the State, through Assembly Bill 32, acknowledged that human activities have increased the amount of greenhouse gases in the atmosphere and that such increases are likely to cause worldwide climate changes ("global warming"). The most common greenhouse gases are carbon dioxide (CO2), water vapor, methane, and ozone,

but a suite of other gases are known to cause greenhouse effects, including: aerosols (suspensions of particulate matter in the air); chlorofluorocarbons, hydrofluorocarbons, and perfluorocarbons (CFCs, HFCs, PFCs); nitrous oxides, and sulfur hexafluoride. These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as High Global Warming Potential gases ("High GWP gases"). Each gas has a different potential, on a per weight basis, for causing greenhouse effects. For ease of calculation, any mixture of greenhouse gases is expressed as its equivalent weight of CO2 (CO2e). Given the international nature of greenhouse gases, emissions are calculated and compared in metric tons. Greenhouse gases are produced by a variety of processes, notably combustion (CO2 and aerosols); the decomposition of organic matter (CO2, nitrous oxides, and methane); and industrial productions and releases (aerosols, CO2, CFCs, HFCs, and PFCs, nitrous oxide, and sulfur hexafluoride).

Regulatory Entities

Air pollutants are regulated at the national, state, and air basin level, the regulatory agencies at each level having different degrees of responsibility. The United States Environmental Protection Agency (EPA) regulates at the national level through the Clean Air Act of 1970, CARB regulates at the state level, and the SCAQMD regulates at the air basin level.

US Environmental Protection Agency. The EPA's jurisdiction includes global, international, national, and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans (SIP), provides research and guidance in air pollution programs, and sets national Ambient Air Quality Standards (AAQS), also known as federal standards, for the priority pollutants. The national AAQS were set to protect the health of sensitive individuals; thus, the standards are periodically updated as new knowledge regarding the health effects of the criteria pollutants becomes available.

California Air Resources Board (CARB). The CARB has overall responsibility for statewide air quality maintenance and air pollution prevention, including preparing and updating the SIP for the State of California describing existing air quality conditions and the measures that will be implemented to attain and maintain national AAQS. On September 27, 2007, CARB adopted the State Strategy for the 2007 SIP. The CARB also administers California AAQS, the state standards for the ten air pollutants designated in the California Clean Air Act (the six federal priority pollutants plus visibility reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride).

South Coast Air Quality Management District (SCAQMD). The SCAQMD oversees air quality in the South Coast Air Basin. The SCAQMD is responsible for controlling emissions primarily from stationary sources, maintaining air quality monitoring stations throughout the Air Basin, and developing, updating, and implementing the Air Quality Management Plan (AQMP) for the Air Basin (in concert with the Southern California Association of Governments [SCAG]). The AQMP is the AQMD's plan for bringing the South Coast Air Basin, which is designated as a nonattainment area,

into compliance with the requirements of the national and California ambient air quality standards (see below). The 2007 AQMP, which is the current AQMP, was adopted by the SCAQMD on June 1, 2007 and was incorporated by the CARB into the SIP.

The 2007 AQMP includes emissions inventories, ambient measurements, scientific data, control strategies, and air quality modeling. It outlines a detailed strategy for meeting the federal health-based standards for $PM_{2.5}$ by 2015 and the 8-hour ozone standard by 2024 while accounting for and accommodating future expected growth. Most of the reductions will be from mobile sources, which are responsible for about 75 percent of all smog- and particulate-forming emissions. The 2007 AQMP includes 37 control measures proposed for adoption by the SCAQMD, including measures to reduce emissions from new developments and more reductions from industrial facilities.

To achieve the goals of the AQMP, the SCAQMD has promulgated a suite of rules governing a wide variety of activities. Of particular relevance to the Marina Park project are two rules applicable to contruction activities.

SCAQMD Rule 403 – Fugitive Dust. The purpose of this Rule is to control the amount of PM entrained in the atmosphere from man-made sources of fugitive dust. The rule prohibits emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area to be visible beyond the emission source's property line. Construction activities need to apply control measures such as site watering, wheel washing, and speed limits as necessary, and prepare and submit a dust control plan and dust control records.

SCAQMD Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities. This rule limits emissions of asbestos, a TAC, from structural demolition/ renovation activities. The rule requires the SCAQMD to be notified of proposed demolition/ renovation activities and the project proponent to survey those structures for the presence of asbestos-containing materials (ACMs). The rule also includes emission control measures and ACM removal, handling, and disposal techniques.

Ambient Air Quality Standards

The national and state AAQS (**Table 5.2-1**) are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. The standards have been developed by considering a suite of factors related to health effects, including dose, length of exposure, and toxic effects.

Table 5.2-1: Ambient Air Quality Standards and Relevant Effects

Air Pollutant	Averaging Time	California Standard	National Standard	Most Relevant Effects
Ozone	1 Hour	0.09 ppm	—	(a) Decrease of pulmonary function, lung edema in humans and animals; (b) Alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Altered connective tissue metabolism and pulmonary morphology and function after long-term exposures; (e) Vegetation damage; (f) Property damage.
	8 Hour	0.070 ppm	0.075 ppm	
Carbon Monoxide (CO)	1 Hour	20 ppm	35 ppm	(a) Aggravation of angina pectoris and other coronary conditions; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; (d) Possible increased risk to fetuses.
	8 Hour	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm	—	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms; (b) Pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) Atmospheric discoloration.
	Mean	0.030 ppm	0.053 ppm	
Sulfur Dioxide (SO_2)	1 Hour	0.25 ppm	—	Bronchoconstriction accompanied by wheezing, shortness of breath, and chest tightness during physical activity in persons with asthma.
	24 Hour	0.04 ppm	0.14 ppm	
	Mean	—	0.030 ppm	
Particulate Matter (PM_{10})	24 hour	50 $\mu g/m^3$	150 $\mu g/m^3$	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Inhibition of pulmonary function growth in children; (c) Increased risk of premature death from heart or lung diseases in the elderly.
	Mean	20 $\mu g/m^3$	—	
Particulate Matter ($PM_{2.5}$)	24 Hour	—	35 $\mu g/m^3$	
	Mean	12 $\mu g/m^3$	15 $\mu g/m^3$	
Sulfates	24 Hour	25 $\mu g/m^3$	—	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) Property damage.
Lead	30-day	1.5 $\mu g/m^3$	—	(a) Learning disabilities; (b) Impairment of blood formation and nerve conduction.
	Quarter	—	1.5 $\mu g/m^3$	

ppm = parts per million (concentration) µg/m3 = micrograms per cubic meter ppm = parts per million
Mean = Annual Arithmetic Mean 30-day = 30-day average
Quarter = Calendar quarter
Source: California Air Resources Board, 2008.

Climate Change/Greenhouse Gas Regulation

California Policy

One source of ongoing climate change is the emission of greenhouse gases worldwide from a wide variety of sources, both natural and anthropogenic. Notable human-induced emissions include fuel combustion, industrial emissions, and agriculture. The State of California has taken several measures in an effort to reduce its contribution to climate change, as discussed below.

On June 1, 2005, the Governor issued Executive Order S 3-05 which set the following greenhouse gas emission reduction targets:

- By 2010, reduce greenhouse gas emissions to 2000 levels;
- By 2020, reduce greenhouse gas emissions to 1990 levels;
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

To meet these targets, the Climate Action Team prepared a report to the Governor in 2006 that contains recommendations and strategies to help ensure the targets in Executive Order S-3-05 are met (2006 CAT Report).

In 2006, the California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 defines greenhouse gases to be carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. AB 32 requires that greenhouse gases emitted in California be reduced to 1990 levels (427 million tons of CO2 equivalent gases) by the year 2020, and charges the CARB with monitoring and regulating sources of greenhouse gases.

Under AB 32, CARB published its Final Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California in October 2007, which include 44 early action measures that apply to the transportation, commercial, forestry, agriculture, cement, oil and gas, fire suppression, fuels, education, energy efficiency, electricity, and waste sectors. The CARB estimates that the 44 recommendations will result in reductions of at least 42 million tons per year of CO2-equivalent gases by 2020, representing approximately 25 percent of the 2020 target.

The CARB Board approved a Climate Change Proposed Scoping Plan in December 2008 to reduce overall carbon emissions in California while creating new jobs and enhancing economic growth. The measures in the Scoping Plan will be in place by 2012.

SB 97, passed in August 2007, requires that the Office of Planning and Research (OPR) prepare, develop, and transmit guidelines to the Resources Agency for the mitigation of the effects of greenhouse gas emissions. SB 97 also requires that, before January 1, 2010, the Resources Agency certify and adopt guidelines prepared and developed by the OPR.

The recommended approach for GHG analysis included in the Governor's Office of Planning and Research (OPR) June 2008 Technical Advisory (TA) is to: (1) identify and quantify GHG emissions,

(2) assess the significance of the impact on climate change, and (3) if significant, identify alternatives and/or mitigation measures to reduce the impact below significance.

Neither the CEQA statute nor Guidelines prescribe thresholds of significance or a particular methodology for performing an impact analysis. The June 2008 Governor's Office of Planning and Research (OPR) guidance provides some additional direction regarding planning documents as follows: "CEQA can be a more effective tool for greenhouse gas emissions analysis and mitigation if it is supported and supplemented by sound development policies and practices that will reduce greenhouse gas emissions on a broad planning scale and that can provide the basis for a programmatic approach to project-specific CEQA analysis and mitigation. For local government lead agencies, adoption of general plan policies and certification of general plan Environmental Impact Reports (EIRs) that analyze broad jurisdiction-wide impacts of greenhouse gas emissions can be part of an effective strategy for addressing cumulative impacts and for streamlining later project-specific CEQA reviews."

ARB has published draft preliminary guidance to agencies on how to establish interim significance thresholds for analyzing GHG emissions.[1] That guidance, while still in draft form, does provide some assistance to the City in evaluating whether projects would impede the State's mandatory requirements under AB 32 to reduce statewide GHG emissions to 1990 levels by 2020.

The Guidance describes generally three classes of common projects: industrial, commercial, and residential projects. For each type of project, the ARB guidance document recommends that a two-pronged threshold be employed, one performance based and one numerical. For performance standards, the draft guidance suggests that operations and construction of the project be evaluated for its consistency with applicable performance standards contained in plans designed to reduce GHG emissions and/or help meet the State's emission reduction objectives in AB 32. The ARB guidance contains two numerical standards that guide the City's analysis of the impacts of this project. First, the guidance states that some small residential and commercial projects, emitting 1,600 metric tons of CO2e per year or less, would clearly not interfere with achieving the States emission reduction objectives in AB 32 (and EO S-03-05) and thus may be deemed categorically exempt from CEQA. The guidance does not state or imply that projects emitting more than 1,600 metric tons of CO2e per year will necessarily result in a significant impact, although at this point, the guidance has no precise numerical threshold for commercial and residential projects. For industrial projects, the guidance proposes that projects that emit less than 7,000 metric tons of CO2e per year may be considered less than significant, recognizing that AB 32 will continue to reduce or mitigate emissions from these sorts of projects over time.

[1] California, State of, 2008. California Air Resources Board (ARB). *Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Thresholds for Greenhouse Gases Under the California Environmental Quality Act*. October 24, 2009.

Regional Policies

SCAQMD. The South Coast Air Quality Management District (SCAQMD) currently has no formal reduction plans or regulations regarding greenhouse gases that are applicable to the proposed project.

SCAG. SB 375 requires that by September 30, 2010 (and updated every eight years in concert with the Regional Transportation Plan thereafter), the California Air Resources Board (CARB), working in consultation with Metropolitan Planning Organizations (MPOs) provide to the MPOs greenhouse gas reduction targets for automobiles and light trucks for the years 2020 and 2035.

SCAG, or a combination of SCAG and its sub regions, is required to prepare a Sustainable Communities Strategy (SCS) to achieve these greenhouse gas reduction targets. Alternatively if an SCS cannot achieve the targets an Alternative Planning Strategy (APS) must be prepared to show how the targets can be achieved through alternative development patterns, infrastructure or additional transportation measures or policies.

The City of Newport Beach is in the Orange County sub-region (Orange County Council of Governments, or OCOG). Once the SCS for the subregion and region is adopted the General Plan (if it is not already) must be made consistent with the SCS.

Residential or residential mixed-use projects (where 75% of the building area is residential) that are consistent with the SCS/General plan (assuming the SCS is found to achieve the greenhouse reduction targets) and that incorporate mitigation measures required by an applicable prior environmental document will not be required to address the following issues in their CEQA documents: 1) growth inducing impacts; 2) global warming impacts from cars and light duty truck trips, 3) car and light duty truck trip impacts on the regional transportation network, 4) a reduced residential density alternative to address the effects of car and light duty truck trips.

SB 375 provides for limited review under the California Environmental Quality Act (CEQA) for transit priority projects (projects that contains at least 50% residential floor area, not less than 0.75 FAR, a minimum density of 20 dwelling units per acre and are within one half mile of a “major transit stop” or “high-quality transit corridor” included in an RTP) where impacts are sufficiently analyzed and mitigated in the applicable RTP EIR.

Once the SCS (or APS) for the SCAG region is accepted by CARB, projects that are consistent with the General Plan would be eligible for CEQA streamlining identified in SB 375.

City of Newport Beach

Until more guidance is provided from the expert agencies (ARB and/or SCAQMD), the City of Newport Beach intends to consider projects emitting 1,600 metric tons of CO2e per year or less to be less than significant and no further analysis is required. For projects exceeding the screening threshold of 1,600 metric tons of CO2e per year, the City will consider projects to have significant impacts if they either (1) are not substantially consistent with policies and standards set out in federal, state, and local plans designed to reduce greenhouse gas emission or (2) would emit more than 6,000 metric tons of CO2e per year. Projects that do not exceed these thresholds would be considered to have significant impacts, and thus could be expected to impede the State's mandatory requirement under AB 32 to reduce statewide GHG emissions to 1990 levels by 2020.

5.2.3 - Existing Conditions

The proposed project is located in the City of Newport Beach, in the County of Orange, and within the South Coast Air Basin (Air Basin). Regional and local air quality is influenced by dominant airflows, topography, atmospheric inversions, location, season, and time of day. The quality of the air can be assessed by measuring the concentrations of certain air pollutants over time.

Local Air Quality

Local air quality is best represented by examining existing ambient air quality and historical trends and projections in the vicinity of the project site based on measurements made by the SCAQMD. The City of Newport Beach is located within the central portion of Source Receptor Area (SRA) 18 (Central Orange County Coastal). The SCAQMD's Costa Mesa monitoring station is the closest station in SRA 18 to the proposed project site. As that station does not monitor PM_{10} and $PM_{2.5}$, data from the Mission Viejo Station was used for these criteria pollutants. Data from these stations are summarized in **Table 5.2-2**.

The data show occasional violations of the state 8-hour ozone standard and the federal and state PM_{10} standards. The CO standard has not been violated in the last three years at this station.

Attainment Status

Air basins in which ambient air quality standards are exceeded are designated as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." The Air Basin is designated as nonattainment for State and national PM_{10} and $PM_{2.5}$ standards, the State ozone 1-hour standard, and the national 8-hour ozone standard.

Table 5.2-2: Air Quality Summary, Costa Mesa and Mission Viejo Monitoring Stations

Air Pollutant, Averaging Time (Units)	2005	2006	2007
Ozone			
Max. 1 Hour (ppm)	0.085	0.074	0.082
Days > CAAQS (0.09 ppm)	0	0	0
Max. 8 Hour (ppm)	0.072	0.062	0.072
Days > NAAQS (0.08 ppm[1])	0	0	0
Days > CAAQS (0.070 ppm)	2	0	2
Course Particulates (PM_{10})			
Max. 24-Hour Concentration ($\mu g/m^3$)	65	104	489
Annual Average ($\mu g/m^3$)	28.1	*	38.4
Days > CAAQS 24-Hour (50 $\mu g/ m^3$)	17.5	*	37.3
Days > NAAQS 24-Hour (150 $\mu g/ m^3$)	0	0	6.1
Fine Particulates ($PM_{2.5}$)			
Max. 24-Hour Concentration ($\mu g/m^3$)	35.3	46.9	46.8
Annual Average ($\mu g/m^3$)	10.6	*	*
Days > NAAQS 24-Hour (35 $\mu g/ m^3$)	0	*	*
Carbon Monoxide			
Max 1 Hour (ppm) [2]	4.51	4.3	4.47
Days > CAAQS (20 ppm)	0	0	0
Days > NAAQS (35 ppm)	0	0	0
Max 8 Hour (ppm)	3.16	3.01	3.13
Days > CAAQS (9.0 ppm)	0	0	0
Days > NAAQS (9.0 ppm)	0	0	0

Notes:
> = exceed ppm = parts per million * = no data or insufficient data
max = maximum CAAQS = California Ambient Air Quality Standard
NAAQS = National Ambient Air Quality Standard
[1] The ARB reported the days over the old 1997 8-hour standard of 0.08 ppm. The standard has recently been revised to 0.075 ppm.
[2] The ARB does not report 1-hour average CO concentrations in its database, only 8-hour CO concentrations. Therefore, the 1-hour CO concentration was derived by dividing the 8-hour concentration by 0.7 (CO Protocol).
Source: California Air Resources Board, 2008b.

5.2.4 - Thresholds of Significance

According to the CEQA Guidelines' Appendix G Environmental Checklist, to determine whether impacts to air quality constitute significant environmental effects, the following questions are analyzed and evaluated.

Would the project:

a.) Conflict with or obstruct implementation of the applicable air quality plan?

b.) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

c.) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

d.) Expose sensitive receptors to substantial pollutant concentrations?

e.) Create objectionable odors affecting a substantial number of people?

Along with the above guidelines from the CEQA Checklist, pursuant to City of Newport Beach guidance and interim standard:

- Would the project result in more than 1,600 metric tons of CO2 e, (less than significant impact) and if so would the project be substantially consistent with plans and policies designed to reduce greenhouse gases; or would the project exceed 6,000 metric tons CO2e (significant impact).

The following analysis uses numeric thresholds of significance for construction and operation as identified by SCAQMD in their CEQA Handbook (see **Table 5.2-3** below and the discussion under 5.2-B below).

5.2.5 - Project Impact Analysis and Mitigation Measures

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Analytical Methodology

The air quality analysis for the proposed project is based on the methods and significance criteria set forth in the 1993 CEQA Air Quality Handbook. The analysis included construction and operational air quality modeling, and greenhouse gas emissions modeling. URBEMIS 2007 Version 9.2 was used to quantify project-related emissions, except that tugboat emission factors were obtained from the Port of Long Beach Emissions Inventory for 2007, as discussed in more detail in Appendix C. Per comments submitted by South Coast Air Quality Management District (SCAQMD) during the Notice of Preparation comment period, the air quality analysis included estimation of $PM_{2.5}$ emissions and use of the Localized Significance Thresholds (LSTs). The analysis assumed compliance with applicable SCAQMD rules. The CO2 hotspot analysis used the CALINE4 model, which has several inputs. One input is the traffic volumes, which was provided by the project-specific Traffic Analysis. The traffic volumes used in this analysis are the existing + growth + cumulative + project peak PM hour volumes. The traffic volumes contain cumulative traffic; therefore, this analysis presents a worst-case scenario. The emission factors used in the CALINE4 model were generated using the EMFAC2007 model for the year 2010.

The SCAQMD recommended the preparation of a Health Risk Assessment if the project would attract toxic air contaminant generators such as heavy-duty diesel vehicles, but because the proposed project would not do so, an HRA was not prepared.

The air quality modeling output is provided in **Appendix C**, which also provides details of the methodology.[2]

Construction Impacts

5.2-A: The project could exceed the SCAQMD significance thresholds during the construction phase of the project.

SCAQMD Significance Criteria

Regional significance thresholds have been established by SCAQMD. Projects within the South Coast Air Basin region with construction emissions in excess of any of the regional thresholds in **Table 5.2-3** are considered to have a significant impact. The localized significance thresholds (LSTs) shown in **Table 5.2-3** represent the maximum emissions from a project that would not cause or contribute to an exceedance of the most stringent applicable state or national ambient air quality standard. The LSTs are developed based on the ambient concentrations of NO_x, CO, PM_{10}, and $PM_{2.5}$ for each source receptor area.

Table 5.2-3: Construction Significance Thresholds

Pollutant	Regional Threshold (pounds per day)	Localized Significance Threshold
Nitrogen Oxides (NO_x)	100	197
Volatile Organic Compounds (VOC)	75	None
Particulate Matter (PM_{10})	150	14
Particulate Matter ($PM_{2.5}$)	55	9
Oxides of Sulfur (SO_x)	150	None
Carbon Monoxide (CO)	550	1,711

ppm = parts per million $\mu g/m^3$ = micrograms per cubic meter
Source: South Coast Air Quality Management District (SCAQMD 2006 and SCAQMD 2008b) for source receptor area 18 for 5-acre disturbed per day, for receptor distance 25 meters.

Regional Impact Analysis

Construction of the proposed project would result in air emissions (**Table 5.2-4**) from the construction equipment exhaust, worker vehicles, fugitive dust, and on-road truck travel. As shown in the table, Phases 1 and 2 are not anticipated to result in significant impacts; however, construction of the Phase 3 full buildout (prior to mitigation) would result in emissions that would exceed the SCAQMD regional significance thresholds for NOx.

[2] The on-road vehicular operational air quality analysis is based on the previous traffic analysis that included a greater net increase in project trips (as it assumed that existing trips from the mobile home park were less than the ITE trip generation rate because they were based on counts taken when units were potentially not fully occupied); therefore this analysis results in a more conservative evaluation of project operational impacts than are now anticipated.

Localized Impact Analysis

For purposes of CEQA, the SCAQMD considers a sensitive receptor to be a location where a sensitive individual (children, the elderly, and persons with preexisting respiratory or cardiovascular illness) could remain for 24 hours, such as residences, hospitals, or convalescent facilities. Commercial and industrial facilities are not included in the definition because employees do not typically remain onsite for 24 hours. However, when assessing the impact of pollutants with 1-hour or 8-hour standards (such as nitrogen dioxide and carbon monoxide), commercial and/or industrial facilities would be considered sensitive receptors.

Because the existing mobile home and community facilities would be removed prior the construction of the project, the closest sensitive receptors for the purposes of the localized impact analysis are residential land uses located to the south and west of the project site. There are several mobile homes and a hotel located to the west of the project site, across 18th Street, at an approximate distance of 12 meters (40 feet) from the project boundary. There are also residences located approximately 30 meters (100 feet) south of the project boundary, across West Balboa Boulevard as well as residences about 60 meters (66 feet) from the proposed tennis courts on 15th street. In addition, the project encompasses the public beach on the west side of the project site. The nearest church from the project site is approximately 97.5 meters (320 feet) from the southeast corner of the project boundary. The Newport Elementary is the closest school to the project site, located approximately 253 meters (830 feet) from the southeast corner of the project boundary.

Although there are other sensitive receptors at greater distances from the project, this assessment identifies the nearest sensitive receptors because they would receive the greatest impact from the onsite project emissions; if they would experience no significant impacts, then receptors farther away would likewise not experience significant impacts. The localized analysis only includes onsite emissions, such as from the off-road equipment and fugitive dust. Some of the off-road equipment, such as the tug/barge operation, would operate offsite, but to present a worst-case scenario, it is assumed that all off-road emissions would occur onsite.

Table 5.2-4: Regional Construction Emissions (Unmitigated)

Phase	Emissions (pounds per day)					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Phase 1						
Demolition	2	12	8	0	2	1
Mass grading	5.7	50.4	25.8	<0.1	52.3	12.6
Phase 2						
Mass grading[1]	5.7	50.4	25.8	<0.1	52.3	12.6
Significance Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Phases 1 and 2 Significant Impact?	*No*	*No*	*No*	*No*	*No*	*No*
Phase 3						
Sand/soil export by truck	0.4	5.1	2.0	<0.1	0.2	0.2
Sand export by tugboat/barge	3.7	54.9	12.9	0.5	2.2	2.0
Subtotal	10	**110**	41	1	55	**15**
Trenching	3	23	12	0	1	1
Building and fine grading	8	45	39	<1	13	5
Building	4	19	25	<1	1	1
Building, coating, and asphalt paving	66	37	38	<1	3	3
Maximum Daily Emissions	**66**	**110**	**41**	**1**	**55**	**15**
Significance Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Phase 3 Significant Impact?	*No*	***Yes***	*No*	*No*	*No*	*No*

VOC = volatile organic compounds NOx = nitrogen oxides CO = carbon monoxide
SO_x = sulfur oxides PM_{10} and $PM_{2.5}$ = particulate matter
The maximum daily emissions refer to the maximum emissions that would occur in one day. Note that mass grading and export of sand is assumed to occur at the same time.
1. Mass grading for Phase 1 would be worst case emissions for Phase 2 which would involve similar to less grading and laying of sod.
Source: Michael Brandman Associates 2008. Sirius Environmental 2009

The results of the localized analysis (**Table 5.2-5**) indicate that PM_{10} and $PM_{2.5}$ emitted during grading, both the initial grading to be undertaken during Phase 1 and the fine grading to be undertaken during Phase 2 could exceed the LSTs at the nearest sensitive receptors. The calculated concentrations would be greatest near the boundary of the project site, immediately adjacent to the area being graded, and would disperse rapidly.

Table 5.2-5: Localized Significance Analysis (Construction, Unmitigated)

Activity	Onsite Emissions (pounds per day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
Phase 1				
Demolition	10	6	2	1
Mass grading	50	24	**52**	**13**
Phase 2				
Mass grading[1]	50	24	**52**	**13**
Localized Significance Threshold	*197*	*1,711*	*14*	*9*
Phases 1 and 2 Significant Impact?	*No*	*No*	***Yes***	***Yes***
Phase 3				
Trenching	24	11	1	1
Building and fine grading	44	25	12	4
Building	17	12	1	1
Building, coating, and asphalt paving	34	21	3	3
Maximum Daily Emissions during Phase 3	44	25	12	4
Localized Significance Threshold	*197*	*1,711*	*14*	*9*
Phase 3 Significant Impact?	*No*	*No*	*No*	*No*

Note: Each of the above activities does not occur at the same time; therefore, the maximum daily emissions are assumed to be the maximum emissions value of the activities that would occur in one day.
1. Mass grading for Phase 1 would likely be worst case; emissions for Phase 2 would involve similar to less grading and laying of sod.
Source of LST: SCAQMD mass rate localized significance thresholds for SRA 18, 25 meter distance.

Mitigation Measures

The City of Newport Beach shall apply the following mitigation measures to construction activities:

MM 5.2-A.1 During all phases of project construction, the City of Newport Beach shall limit grading and earth moving to no more than five acres per day.

MM 5.2-A.2 During all phases of project construction the City of Newport Beach shall ensure that the following methods to reduce fugitive dust emissions are undertaken:

- Exposed soil and sand surfaces shall be watered periodically to reduce dust.
- Construction equipment speed on unpaved areas shall be limited to less than 15 miles per hour.

MM 5.2-A.3 During Phase 3 project construction, the City of Newport Beach shall require tugboat(s) used in sand export activities to have a propulsion engine built after the year 2000 or meeting Year 2000 emissions standards.

Level of Significance After Mitigation

As shown in **Table 5.2-6** MM 5.2-A.3 would reduce emissions of NOx to below the regional significance threshold because newer tugboat engines emit less NO_x per horsepower hour than older engines. Emissions of CO would also be reduced by MM 5.2-A.3, and all three mitigation measures would reduce emissions of PM.

Table 5.2-6: Regional Construction Emissions (Mitigated)

Phase	Emissions (pounds per day)					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Phases 1						
Demolition	2	12	8	0	2	1
Mass grading	5.7	50.4	25.8	<0.1	52.3	12.6
Phase 2						
Mass grading[1]	5.7	50.4	25.8	<0.1	52.3	12.6
Significance Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Significant Impact Phases 1 and 2?	*No*	*No*	*No*	*No*	*No*	*No*
Phase 3						
Sand export by truck Sand export by tugboat Subtotal	0.4 3.0 9	5.1 31.5 87	2.0 8.7 37	<0.1 0.5 1	0.2 1.6 54	0.2 1.4 14
Trenching	3	23	12	0	1	1
Building and fine grading	8	45	39	<1	13	5
Building	4	19	25	<1	1	1
Building, coating, and asphalt paving	66	37	38	<1	3	3
Maximum Daily Emissions	**66**	**87**	**39**	**1**	**54**	**14**
Significance Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Significant Impact Phase 3?	*No*	*No*	*No*	*No*	*No*	*No*

VOC = volatile organic compounds NOx = nitrogen oxides CO = carbon monoxide
SO_x = sulfur oxides PM_{10} and $PM_{2.5}$ = particulate matter
The maximum daily emissions refer to the maximum emissions that would occur in one day. Note that mass grading and export of sand is assumed to occur at the same time.
1. Mass grading for Phase 1 would be worst case emissions for Phase 2 which would involve similar to less grading and laying of sod.
Source: Michael Brandman Associates 2008.

As shown in **Table 5.2-7**, short-term localized emissions after implementation of the above mitigation measures would not exceed any of the LSTs. Mitigation Measures MM 5.2-A.1 and MM 5.2-A.2 would limit the amount of grading and fugitive dust, thus reducing PM emissions from project construction enough to avoid a potential exceedance of a localized threshold.

Table 5.2-7: Localized Significance Analysis (Construction, Mitigated)

Activity	Onsite Emissions (pounds per day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$
Phases 1				
Demolition	10	6	2	1
Mass grading	40	20	10	4
Phase 2				
Mass grading[1]	40	20	10	4
Localized Significance Threshold	*197*	1,711	14	9
Significant Impact Phases 1 and 2?	*No*	*No*	*No*	*No*
Phase 3				
Trenching	24	11	1	1
Building and fine grading	44	25	5	3
Building	17	12	1	1
Building, coating, and asphalt paving	34	21	3	3
Maximum Daily Emissions	44	25	10	4
Localized Significance Threshold	*197*	*1,711*	*14*	*9*
Significant Impact Phase 3?	*No*	*No*	*No*	*No*

Note: Each of the above activities does not occur at the same time; therefore, the maximum daily emissions represent the maximum emissions that would occur in one day.
1. Mass grading for Phase 1 would be worst case emissions for Phase 2 which would involve similar to less grading and laying of sod.
Source: Michael Brandman Associates 2008. Sirius Environmental 2009

Operational Emissions

5.2-B: The project would not exceed the SCAQMD regional significance thresholds during operation.

Projects within the South Coast Air Basin region with operational-phase emissions in excess of any of the thresholds established by the SCAQMD are considered to have a significant impact on air quality. Those thresholds are:

- NOx, VOC, and $PM_{2.5}$ 55 pounds per day;
- PM_{10} and SO_x 150 pounds per day; and
- CO 550 pounds per day.

Impact Analysis

Existing Emissions

Emissions from the 57-unit mobile home park (**Table 5.2-8**) were estimated using the estimated trips provided in the project traffic study (Appendix K).[3]

Table 5.2-8: Existing Emissions

Source	Emissions (pounds per day)					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Summer: Operational	2.4	2.7	25.0	0.0	3.4	0.7
Summer: Area *	3.9	1.0	4.8	0.0	0.0	0.0
Summer: Existing Total	**6.3**	**3.7**	**29.8**	**0.0**	**3.4**	**0.7**
Winter: Operational	2.4	3.2	24.2	0.0	3.4	0.7
Winter: Area*	3.3	1.4	0.6	0.0	0.0	0.0
Winter: Existing Total	**5.7**	**4.6**	**24.8**	**0.0**	**3.4**	**0.7**

Notes:
VOC = volatile organic compounds NOx = nitrogen oxides CO = carbon monoxide
SOx = sulfur oxides PM_{10} and $PM_{2.5}$ = particulate matter
* Area sources include natural gas, landscape, consumer products, and painting.
Source: URBEMIS Output, Appendix C. Michael Brandman Associates 2008

Project Emissions

Operational, or long-term, emissions occur over the life of the project. Operational emissions include mobile and area source emissions. Area source emissions are from consumer products, heaters that consume natural gas, gasoline-powered landscape equipment, and architectural coatings (painting). Mobile emissions from motor vehicles are the largest single long-term source of air pollutants from the project. Estimates of vehicle trips were based on the trip generation rates from the project-specific traffic impact analysis. The Girl Scout House emissions were not calculated as the facility would be built up to its original intensity and the net emissions would be zero. Operational emissions from vehicles and area sources were estimated using the URBEMIS2007 model.

Phases 1 and 2

Phases 1 and 2 of the project would result in fewer trips (as well as less on-site consumption of electricity and natural gas as a result of elimination of the mobile homes) and therefore would result in fewer air emissions than existing uses.

[3] As noted earlier the on road vehicular operational emissions analysis is based on the previous traffic study that used existing trips from trip counts that could have resulted in undercounting of existing trips. The air quality analysis is therefore based on a slightly greater net increase in trips than is currently identified in the traffic study and therefore represents a conservative analysis of air quality impacts.

Phase 3

The visiting vessel marina includes 23 slips ,40-feet in length. One additional side tie and a 200-foot long dock are provided. The water-side facilities include an accessible ramp (with a locking gate) and a floating dock structure that will provide on-water storage for sabots (dinghies), CFJ's (small sailboats), 420's and other dingy-type craft that might be used by the sailing program. Space is provided for 30 sabot (on deck) and 45 small sailboats. Sailboats can use onboard engines to taxi in and out of docking areas. Emissions were estimated assuming 100 boats would taxi for one hour per day. Emission factors were generated by the U.S. EPA model, NONROAD.

Operational emissions are shown in **Table 5.2-9** for the summer season and **Table 5.2-10** for the winter season. As shown in the tables, project emissions would not exceed the SCAQMD's regional thresholds and are considered less than significant. Therefore, no mitigation measures are required.

Table 5.2-9: Phase 3 Operational Emissions (Summer, Unmitigated)

Source	Emissions (pounds per day)					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Project Vehicles	4.8	6.7	58.6	0.1	10.0	1.9
Project Area *	0.7	0.4	4.9	0.0	0.0	0.0
Project Marina Boats	2.4	13.9	8.4	2.2	1.8	1.6
Project Subtotal	7.9	21.0	71.9	2.3	11.8	3.5
Existing	-6.3	-3.7	-29.8	0.0	-3.4	-0.7
Net New Emissions	**1.6**	**17.3**	**42.1**	**2.3**	**8.4**	**2.8**
Significance Threshold	55	55	550	150	150	55
Significant Impact?	No	No	No	No	No	No

Notes:
VOC = volatile organic compounds NOx = nitrogen oxides CO = carbon monoxide
SOx = sulfur oxides PM_{10} and $PM_{2.5}$ = particulate matter
* Area sources include natural gas, landscape, consumer products, and painting.
Source: URBEMIS Output, Appendix C. Michael Brandman Associates 2008

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant.

Table 5.2-10: Phase 3 Operational Emissions (Winter, Unmitigated)

Source	Emissions (pounds per day)					
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Project Operational	5.3	8.0	56.5	0.1	9.9	1.9
Project Area *	0.3	0.3	0.3	0.0	0.0	0.0
Project Marina Boats	2.4	13.9	8.4	2.2	1.8	1.6
Project Subtotal	8.0	22.2	65.2	2.3	11.7	3.5
Existing	-5.7	-4.6	-24.8	-0.0	-3.4	-0.7
Net New Emissions	**2.3**	**17.6**	**40.4**	**2.3**	**8.3**	**2.8**
Significance Threshold	55	55	550	150	150	55
Significant Impact?	No	No	No	No	No	No

Notes:
VOC = volatile organic compounds NOx = nitrogen oxides CO = carbon monoxide
SOx = sulfur oxides PM_{10} and $PM_{2.5}$ = particulate matter
* Area sources include natural gas, landscape, consumer products, and painting.
Source: URBEMIS Output, Appendix C. Michael Brandman Associates 2008

Carbon Monoxide Hotspot Analysis

5.2-C: The project would not cause or contribute to a carbon monoxide violation from project-related and cumulative traffic during operation.

Project and Cumulative Analysis

Phases 1 and 2

Project traffic under Phases 1 and 2 is anticipated to be less than existing, therefore Phases 1 and 2 would not result in an increase in CO emissions at local intersections as compared to today.

Phase 3

The intersections of Newport Blvd. and Via Lido and Newport Blvd. and 32nd Street were analyzed, as these intersections experienced the greatest increase in project trips.[4]

[4] As noted earlier this analysis is based on the previous traffic study that included a greater increase in net project trips (net increase of 352 trips compared to the 261 trips now identified; peak hour increase of 18 trips at Newport and Via Lido and 19 peak hour trips at Newport and 32nd compared to current peak hour increase of 7 and 8 respectively). The current analysis includes fewer project trips distributed in the same manner, thus this analysis presents a conservative analysis of project impacts. The revised traffic analysis includes a greater number of cumulative emissions but that does not affect the project impact.

Table 5.2-11: CO Phase 3 Concentrations

Intersection	1 Hour Estimated CO Concentration (ppm)*	8 Hour Estimated CO Concentration (ppm)**	Significant Impact?***
Newport Blvd and Via Lido	6.2	4.3	No
Newport Blvd and 32nd Street	6.4	4.5	No
Source: Michael Brandman Associates 2008.			

As shown in **Table 5.2-11** the estimated 1-hour and 8-hour average CO concentrations at build-out of Phase 3 in 2010 in combination with background concentrations are below the state and national ambient air quality standards. While it is now unlikely that Phase 3 will build out in 2010, 2010 represents a conservative case as project and background emissions are projected to decrease considerably as the years progress as a result of ongoing emission controls. No CO hotspots are anticipated because of traffic-generated emissions by the proposed project or in combination with other anticipated development in the area. Therefore, the mobile emissions of CO from the project are not anticipated to contribute substantially to an existing or projected air quality violation of CO.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant.

Air Quality Plan

5.2-D: The project could conflict with or obstruct implementation of the applicable air quality plan.

Thresholds of Significance

The CEQA Guidelines indicate that a significant impact would occur if the proposed project would conflict with or obstruct implementation of the applicable air quality plan. The assessment is conducted using the following criteria to determine project consistency with the current Air Quality Management Plan (AQMP).

Project Impact Analysis

Project's Contribution to Air Quality Violations

According to the SCAQMD (1993), a project is consistent with the AQMP if it will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP (SCAQMD 1993, Page 12-3). As shown in Impact 5.2-E, with mitigation the project would comply with applicable air quality standards. Therefore, the project would comply with this criterion and the impact would be less than significant with mitigation.

Control Measures

The next criterion is compliance with the control measures in the 2003 AQMP and the 2007 AQMP. The 2007 AQMP has been adopted by the SCAQMD and ARB, but has not been adopted by the U.S. EPA. Therefore, the two plans are discussed herein.

The 2003 AQMP contains a number of land use and transportation control measures including the following: the District's Stationary and Mobile Source Control Measures; State Control Measures proposed by ARB; and Transportation Control Measures provided by Southern California Association of Governments (SCAG) (AQMP 2003, Page 4-3). ARB's strategy for reducing mobile source emissions include the following approaches: new engine standards; reduced emissions from in-use fleet, require clean fuels, support alternative fuels and reduce petroleum dependency, work with EPA to reduce emissions from national and state sources, and pursue long-term advanced technology measures (AQMP 2003, Page 4-25). Transportation control measures provided by SCAG include those contained in the Regional Transportation Plans (RTP), the most current version being the 2004 RTP (SCAG 2004). The RTP has control measures to reduce emissions from on-road sources by incorporating strategies such as high occupancy vehicle interventions, transit, and information-based technology interventions (AQMP 2003, Page 4-19). The measures implemented by ARB and SCAG affect the project indirectly by regulating the vehicles that the residents may use and regulating public transportation. The project indirectly will comply with the control measures set by ARB and SCAG.

The 2007 AQMP aims to attain the federal PM2.5 and 8-hour ozone standards by 2015 and 2024, respectively. This is done by building upon improvements from the previous plans and incorporating all feasible control measures while balancing costs and socioeconomic impacts. The 2007 AQMP indicates that PM2.5 is formed primarily secondarily. Therefore, instead of reducing fugitive dust, the strategy for reducing PM2.5 focuses on reducing precursor emissions of SOx, directly-emitted PM2.5, NOx, and VOC. The Final 2007 AQMP control measures consist of four components: 1) the SCAQMD's Stationary and Mobile Source Control Measures; 2) ARB's Proposed State Strategy; 3) SCAQMD Staff's Proposed Policy Options to Supplement ARB's Control Strategy; and 4) Regional Transportation Strategy and Control Measures provided by SCAG. The project (all three phases) would comply with all of the SCAQMD's applicable rules and regulations. Therefore, the project would comply with this criterion.

Compliance with the City General Plan

The City of Newport Beach General Plan designates the project site as PR (Parks and Recreation) and PF (Public Facility). The project would be consistent with the General Plan, and would not increase emissions above what was designated for the site.

Mitigation Measures

Implementation of Mitigation Measures MM 5.2.A-1 and MM 5.2.A-2 are required.

Level of Significance After Mitigation

Less than significant.

Air Quality Violations

Impact 5.2-E:	**The project could violate an air quality standards or contribute substantially to an existing or projected air quality violation.**

Impact Analysis

The South Coast Air Basin, the geographical area in which the project is located, is in nonattainment for PM_{10}, $PM_{2.5}$, and ozone. Levels of ozone and PM_{10} are locally high enough that contributions from new sources could add to the concentrations of those pollutants and contribute to a projected air quality violation. Two criteria are used to assess the significance of this impact: 1) the localized construction analysis (see Impact 5.2-A); and 2) the CO hotspot analysis (see Impact 5.2-C).

The localized construction analysis uses thresholds that represent the maximum emissions for a project that would not cause or contribute to an exceedance of the most stringent applicable national or state ambient air quality standard. These LSTs are specific to each source receptor area. If the project results in emissions that do not exceed those thresholds, it follows that it would not cause or contribute to a local exceedance of the standard. The localized construction analysis demonstrated that with mitigation (Phases 1 and 2; no mitigation is needed for Phase 3) , the project would not exceed localized thresholds at nearby sensitive receptors. Therefore, according to this criterion, the air pollutant emissions during construction would result in a less than significant impact with mitigation.

A CO hotspot analysis is the appropriate tool to determine if project emissions of CO during operation could exceed ambient air quality standards. The main source of air pollutant emissions during operation are from offsite motor vehicles traveling on the roads surrounding the project site. The CO hotspot analysis demonstrated that project emissions of CO during operation would not result in an exceedance of the most stringent ambient air quality standards for CO (Phases 1 and 2 would be less than existing conditions; Phase 3 would be less than significant). Therefore, according to this criterion, air pollutant emissions during operation would result in a less than significant impact.

Mitigation Measures

Implementation of Mitigation Measures MM 5.2-A.1 through MM 5.2-A.3 are required.

Level of Significance After Mitigation

Less than significant.

Cumulative Impacts

5.2-F:	**The project could result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors).**

Threshold of Significance

The following tiered approach is used to assess cumulative air quality impacts.

1. Consistency with the regional thresholds for nonattainment pollutants;
2. Project consistency with existing air quality plans and determination of cumulatively considerable contribution;
3. Assessment of the cumulative health effects of the pollutants.

Impact Analysis

Regional Analysis

If an area is in nonattainment for a criteria pollutant, then the background concentration of that pollutant has historically been over the ambient air quality standard. It follows that if a project exceeds the regional threshold for that nonattainment pollutant, then it would result in a cumulatively considerable net increase of that pollutant and result in a significant cumulative impact.

The South Coast Air Basin is in nonattainment for PM_{10}, $PM_{2.5}$, and ozone. Therefore, if a project exceeds the regional thresholds for PM_{10}, or $PM_{2.5}$, then it contributes to a cumulatively considerable impact for those pollutants. Additionally, if the project exceeds the regional threshold for NOx or VOC, then it follows that a project would contribute to a cumulatively considerable impact for ozone.

The regional significance analysis of construction emissions demonstrated that emissions of VOC, PM_{10}, and $PM_{2.5}$ would not be over SCAQMD regional significance thresholds. Therefore, the project does not contribute to a cumulatively significant regional impact to the budget of the pollutants PM_{10} and $PM_{2.5}$. The regional analysis demonstrated that emissions of NOx (during removal of sand and soil by truck and barge) would not be over the regional significance threshold with the implementation of mitigation. Therefore, with mitigation the project would not significantly contribute to the ozone budget in the South Coast Air Basin.

Other criteria pollutants would not contribute to a cumulative effect because the background levels are not high enough for project concentrations to make a substantial difference in the overall cumulative concentration.

Plan Approach

The geographic scope for cumulative air quality impacts is the South Coast Air Basin because that is the area in which the air pollutants generated by the sources within the Basin circulate and are often trapped. SCAQMD is required to prepare and maintain an AQMP and a State Implementation Plan to document the strategies and measures to be undertaken to reach attainment of ambient air quality standards. While the SCAQMD does not have direct authority over land use decisions, it was recognized that changes in land use and circulation planning were necessary to maintain clean air. The SCAQMD evaluated the entire Basin when it developed the AQMP. According to the analysis

contained in Impact 5.2-D, with mitigation the project would be consistent with the most recent AQMP.

Cumulative Health Impacts

The Basin is in nonattainment for ozone, PM_{10}, and $PM_{2.5}$, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (i.e., elderly, children, and the sick). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population experience health effects. However, the health effects are a factor of the dose-response curve. Concentration of the pollutant in the air (dose), the length of time exposed, and the response of the individual are factors involved in severity and nature of health impacts. If a significant health impact results from project emissions, it does not mean that 100 percent of the population would experience health effects.

The regional analysis of construction and operational emissions indicates that without mitigation the project would exceed the SCAQMD regional significance thresholds for NOx (ozone precursor) during removal of sand and soil by barge and truck. Because ozone is a secondary pollutant (it is not emitted directly but formed by chemical reactions in the air), it can be formed miles downwind of the project site. Without mitigation, project emissions of NOx would contribute to the background concentration of ozone and cumulatively cause health effects. Health effects of ozone could include the following: (a) Decrease of pulmonary function and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; and/or (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans. With mitigation (measures MM 5.2-A.1 through MM 5.2-A.3) this would be a less than significant cumulative health impact.

During grading in both Phases 1 and 2, as was shown in the localized analysis, without mitigation the project could result in a significant cumulative contribution to $PM_{2.5}$ and PM_{10} at nearby sensitive receptors during Phase 1 and 2 grading activities. Sensitive individuals may experience health impacts when concentrations of those pollutants exceed the ambient air quality standards. Health impacts may include the following: (a) exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) declines in pulmonary function growth in children; and/or (c) increased risk of premature death from heart or lung diseases in the elderly. This would be a less than significant cumulative health impact with mitigation (measures MM 5.2-A.1 through MM 5.2-A.3).

Mitigation Measures

Implementation of Mitigation Measures MM 5.2-A.1 through MM 5.2-A.3 are required.

Level of Significance After Mitigation

Less than significant. Therefore, there would not be significant cumulative health effects from implementation of the project.

Sensitive Receptors

5.2-G: The project could expose sensitive receptors to substantial pollutant concentrations.

Impact Analysis

Construction

The localized construction analysis uses thresholds that represent the maximum emissions for a project that would not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area. The thresholds are also based on the location of the sensitive receptors. If the project results in emissions under those thresholds, it follows that the project would not cause or contribute to an exceedance of the standard. If the standards are not exceeded at the sensitive receptor locations, it follows that the receptors would not be exposed to substantial pollutant concentrations.

The localized construction analysis demonstrated that without mitigation, the project would not exceed the localized thresholds for CO or nitrogen dioxide. However, without mitigation the localized thresholds for PM_{10} and $PM_{2.5}$ would be exceeded during Phase 1 and 2 grading activities. Therefore, during grading activities associated with Phases 1 and 2, without mitigation the project could expose sensitive receptors to substantial pollutant concentrations of PM_{10} and $PM_{2.5}$. However, with mitigation this would be a less than significant impact with mitigation.

The construction equipment would emit diesel particulate matter, which is a carcinogen. However, the diesel particulate matter emissions are short term in nature. Determination of risk from diesel particulate matter is considered over a 70-year exposure time. Therefore, considering the dispersion of the emissions and the short time frame, exposure to diesel particulate matter is anticipated to be less than significant.

Operation

A CO hotspot analysis is the appropriate tool to determine if project emissions of CO during operation would exceed ambient air quality standards. The main source of air pollutant emissions during operation are from offsite motor vehicles traveling on the roads surrounding the project. The CO hotspot analysis (Impact 5.2-C) demonstrated that emissions of CO during operation would not result in an exceedance of the most stringent ambient air quality standards for CO. Therefore, according to this criterion, air pollutant emissions during operation would result in a less than significant impact (emissions would be less than existing during Phases 1 and 2; less than significant during Phase 3). Additionally, the other criteria pollutants would not exceed the regional significance

thresholds; therefore, it is anticipated that the project would not expose sensitive receptors during operation.

The ARB Air Quality and Land Use Handbook contains recommendations that will "help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution," including recommendations for distances between sensitive receptors and certain land uses. Some of the land uses includes freeways, urban roads, distribution centers, fueling stations, and dry cleaners. The proposed project is not located within a distance of concern. Therefore, air pollution from the land uses assessed in the ARB Handbook would not significantly impact the project.

Indoor air pollutants that may be associated with operation of Phase 3 of the project include VOCs from new carpets and paints, mold spores, radon, cigarette smoke, and combustion sources. The air pollutants that are controlled by the construction of the project include VOCs from carpets and paints and radon. VOCs from new carpets and new paint are temporary impacts that can be reduced by proper ventilation after installation. The health impact from these sources is anticipated to be less than significant.

Radon is a naturally occurring colorless, odorless, and tasteless radioactive gas originating from the radioactive decay of uranium in rock, soil, and groundwater. Radon gets inside a building primarily from soil under homes. It is a known human lung carcinogen and is the largest source of radiation exposure to the general public. Most is rapidly exhaled; however, the inhaled decay products can deposit into the lung where they irradiate sensitive airway cells increasing the risk of lung cancer. According to the EPA map of radon zones, the project is within zone 2, which has a moderate potential for radon exposure. It is anticipated that current building codes that require adequate ventilation would mitigate the potential of radon exposure to less than significant levels.

Operation of Phases 1 and 2 would result in fewer emissions than existing conditions. During operation of Phase 3 of the project, the only known sources of toxic pollutants would be benzene and/or diesel particulate matter from the exhaust of vehicles and boat engines that would access the project site and from the vehicles on the surrounding roadway network. The project would result in similar levels of vehicular (including boat) activity as compared to existing uses in the area; the project would not result in a significant increase in criteria pollutant emissions and similarly would not be expected to result in a significant increase in benzene or diesel particulate matter. Levels of toxic pollutants therefore are not expected to be high enough to evoke a negative health consequence. The impact from toxic pollutants is less than significant.

Mitigation Measures

Implementation of Mitigation Measures 5.2-A.1 MM through MM 5.2-A.3 are required.

Level of Significance After Mitigation

Less than significant.

Objectionable Odors

5.2-H: The project would not create objectionable odors affecting a substantial number of people.

Impact Analysis

Land uses typically considered to be associated with odors include wastewater treatment facilities, waste-disposal facilities, or agricultural operations. The project does not contain land uses typically associated with emitting objectionable odors. During all Phases of the project, diesel exhaust will be emitted during construction (from the heavy duty equipment) and operation (from the boat diesel engines). VOCs will also be emitted during construction of the project from painting and asphalt paving. These odors are objectionable to some; however, the odors would be short term and would disperse rapidly from the project site and therefore should not be at a level to induce a negative response.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant.

Greenhouse Gas Emissions

5.2-I: The project could result in an increase in greenhouse gas emissions that could significantly hinder or delay the State's ability to meet the reduction targets contained in AB 32.

As indicated above the City of Newport Beach currently considers projects emitting 1,600 metric tons of CO2e per year or less to be less than significant with no further analysis required. For projects exceeding the screening threshold of 1,600 metric tons of CO2e per year, the City considers projects to have significant impacts if they either (1) are not substantially consistent with policies and standards set out in federal, state, and local plans designed to reduce greenhouse gas emission or (2) would emit more than 6,000 metric tons of CO2e per year.

Impact Analysis

Construction

Emissions from the combustion of fuel from construction equipment and associated worker vehicles were estimated using URBEMIS2007. The emissions of carbon dioxide from project construction equipment and worker vehicles are shown in **Table 5.2-12**.

Emissions of nitrous oxide and methane are anticipated to be negligible. As shown in **Table 5.2-12**, onsite emissions total 567 metric tons of carbon dioxide equivalents ($MTCO_2e$) from all phases of construction.

Table 5.2-12: Construction Greenhouse Gas Emissions (Unmitigated)

Phase	Carbon Dioxide Emissions (tons)	Emissions ($MTCO_2e$)
Phase 1		
Demolition	6	5
Mass grading	110	100
Phase 2		
Mass grading[1]	110	100
Phase 3		
Export of sand via tugboat	42	38
Trenching	13	12
Building	301	273
Fine grading	26	24
Asphalt paving	15	14
Architectural Coating	1	1
Total	**624**	**567**

$MTCO_2e$ = metric tons of carbon dioxide equivalent, converted from tons by multiplying by 0.9072
[1] Mass grading for Phase 1 would be worst case emissions for Phase 2 which would involve similar to less grading and laying of sod.
Source: Michael Brandman Associates 2008, Appendix C. Sirius Environmental 2009

Operation

Operational emissions are emissions that would occur over the life of the project. Operational emissions include emissions from landscaping equipment, indirect emissions from transporting water to the project, indirect electricity emissions, natural gas combustion, refrigerants (air conditioning and refrigerators), and motor vehicles. Only the main sources of emissions were estimated; minor sources such as landscaping emissions are not shown. Emissions from the existing 57-unit mobile home park were accounted for and are shown in **Table 5.2-13**[5] The Girl Scout House emissions were not calculated as the facility will be built up to its original intensity and the net emissions would be zero. However, indirect electricity and natural gas emissions from the Girl Scout House would be reduced as a result of compliance with updated Title 24 energy efficiency regulations.

Since Phases 1 and 2 would result in fewer trips and less consumption of electricity and natural gas, greenhouse gas emissions under Phases 1 and 2 of the project would be less than existing. The operational emissions from full buildout of the project under Phase 3 are shown in **Table 5.2-13**. As shown in the table, there would be a post-project increase of 667 $MTCO_2e$ per year.

[5] The on-road vehicular operational air quality analysis is based on the previous traffic analysis that included a greater net increase in project trips (as it assumed that existing trips from the mobile home park were less than the ITE trip generation rate because they were based on counts taken when units were potentially not fully occupied); therefore this analysis results in a more conservative evaluation of project operational impacts than are now anticipated.

Table 5.2-13: Phase 3 Operational Greenhouse Gas Emissions (Unmitigated)

Source	Emissions - Metric tons of Carbon Dioxide Equivalents per year ($MTCO_2e$/year)		
	Existing (57 mobile homes)	Phase 3 Project	Difference in Emissions
Water transport for building uses and landscaping	-20	10	-10
Indirect electricity	-117	106	-11
Natural gas	-197	65	-132
Refrigerants	-370	276	-94
Motor vehicles	-343	1000	+657
Boats	0	257	+257
Total	**-1,047**	**1,714**	**667**
Source: Michael Brandman Associates 2008, Appendix C. Sirius Environmental 2009			

Several greenhouse gases were not estimated for the following reasons. The project would not contribute substantially to water vapor.

Ozone is a greenhouse gas; however, unlike the other greenhouse gases, ozone in the troposphere is relatively short-lived and therefore is not global in nature. Aerosols can contribute to global warming and cooling; however, the Intergovernmental Panel on Climate Change (IPCC) does not have global warming potentials for aerosols due to the low level of scientific certainty (IPCC 2007). Additionally, ozone and aerosols are not included in the ARB inventory of greenhouse gas emissions. Therefore, the project's contribution of aerosols and ozone is not estimated.

There is a ban on chlorofluorocarbons; therefore, the project would not generate emissions of these greenhouse gases and they are not considered any further in this analysis. Perfluorocarbons and sulfur hexafluoride are typically used in industrial applications, none of which would be used by the project.

Onsite Greenhouse Gas Reduction Options

Although not required by statute or regulation, or by City policy, there are voluntary greenhouse gas reduction strategies available for projects to reduce greenhouse gas emissions. The Newport Beach General Plan Natural Resources Element includes policies that potentially reduce energy use and vehicle miles traveled. The California Attorney General has provided suggestions on ways to reduce overall impacts. The ARB approved a Scoping Plan in December 2008, which includes a few measures that would be applicable to the project. The Governor's Office of Planning and Research has also suggested mitigation measures. These policies and measures are assessed below to determine the applicability and feasibility of such reduction measures to the proposed project.

General Plan

The City of Newport Beach General Plan does not contain specific greenhouse gas or climate change policies or goals. However, the Natural Resources Element includes policies that have the potential to reduce indirect greenhouse gas emissions from vehicle miles traveled and energy use. Therefore, compliance with the applicable policies would reduce greenhouse gas emissions from the project. Project consistency with applicable policies is shown in **Table 5.8-1** in the Land Use section of this document. As shown in the table, with mitigation, the project would be consistent with the applicable policies except for NR 6.8, which recommends supporting the development of alternative fuel infrastructure; the project does not address this policy.

Attorney General

The Office of the California Attorney General has distributed voluntary mitigation measures and resources (AG 2008). Feasible applicable mitigation measures to reduce greenhouse gas emissions are included as mitigation measures below (see measures MM-5.2-I.5 to MM-5.2-I.11).

CAPCOA

On January 8, 2008, the California Air Pollution Control Officers Association (CAPCOA) released a paper to provide a common platform of information and tools for public agencies. The disclaimer states that it is not a guidance document but a resource to enable local decision makers to make the best decisions they can in the face of incomplete information during a period of change. The paper indicates that it is an interim resource and does not endorse any particular approach. It discusses three groups of potential thresholds, including a no significance threshold, a threshold of zero, and a non-zero threshold (CAPCOA 2008). The non-zero quantitative thresholds as identified in the paper range from 900 to 50,000 metric tons per year. The paper also contains sample mitigation measures. The feasible measures to reduce greenhouse gas emissions are included as mitigation measures (see measures MM-5.2-I.5 to MM-5.2-I.11).

OPR

The Governor's Office of Planning and Research (OPR) published Draft CEQA Guidelines to address Greenhouse Gases (April 13, 2009), which provide general regulatory guidance on the analysis and mitigation of greenhouse gas emissions in CEQA documents. Previously OPR published a Technical Advisory, which provided informal guidance regarding the steps lead agencies should take to address climate change in their CEQA documents. The Advisory contains examples of mitigation measures used by some public agencies to reduce greenhouse gas emissions provided for illustrative purposes only. **Table 5.2-14** analyzes project consistency with the example measures. The feasible measures are included as mitigation measures in this analysis. As shown in the table, many of the example measures are not applicable to the project; some of the measures are feasible and are applied as mitigation measures.

Table 5.2-14: Consistency with OPR Example Mitigation Measures

Example Measure	Project Applicability or Feasibility
Land Use and Transportation	
Implement land use strategies to encourage jobs/housing proximity, promote transit-oriented development, and encourage high density development along transit corridors. Encourage compact, mixed-use projects, forming urban villages designed to maximize affordable housing and encourage walking, bicycling and the use of public transit systems.	Consistent. Although the project does not included a residential component it is locating the recreational facility near residential development, which will provides the opportunity to walk to recreation and reduce vehicle miles traveled.
Encourage infill, redevelopment, and higher density development, whether in incorporated or unincorporated settings.	Consistent with the nature of the project as infill development.
Encourage new developments to integrate housing, civic and retail amenities (jobs, schools, parks, shopping opportunities) to help reduce VMT resulting from discretionary automobile trips.	Consistent. The project provides recreational opportunities near existing residential and employment centers.
Incorporate features into project design that would accommodate the supply of frequent, reliable and convenient public transit.	Consistent. The project is located near existing public transit.
Implement street improvements that are designed to relieve pressure on a region's most congested roadways and intersections.	Consistent. The City implements street improvements as necessary.
Urban Forestry	
Plant trees and vegetation near structures to shade buildings and reduce energy requirements for heating/cooling.	Consistent with implementation of Mitigation Measure 5.2.I.6.
Preserve or replace onsite trees (that are removed due to development) as a means of providing carbon storage.	Consistent. The project design includes trees.
Green Buildings	
Encourage public and private construction of LEED (Leadership in Energy and Environmental Design) certified (or equivalent) buildings.	Consistent with implementation of Mitigation Measures MM 5.2-I.5, MM 5.2-I.6, and MM 5.2-I.7 which require LEED similar credits.
Energy Conservation Policies and Actions	
Recognize and promote energy saving measures beyond Title 24 requirements for residential and commercial projects.	Consistent with implementation of Mitigation Measure MM 5.2-I.6.
Where feasible, include in new buildings facilities to support the use of low/zero carbon fueled vehicles, such as the charging of electric vehicles from green electricity sources.	Does not address.
Programs to Reduce Solid Waste	
Implement a Construction and Demolition Waste Recycling Ordinance to reduce the solid waste created by new development.	Consistent with implementation of Mitigation Measure MM 5.2-I.5.
Source for Measure: Office of Planning and Research (OPR 2008) Source for Project Consistency Analysis: Michael Brandman Associates; Sirius Environmental 2009	

ARB Scoping Plan

The ARB Board approved a Scoping Plan in December 2008. The Scoping Plan outlines reduction measures which will be in place prior to the year 2012. Project consistency or applicability with those measures is assessed below. As shown in **Table 5.2-15**, the project is consistent with the applicable measures with mitigation.

Table 5.2-15: Consistency with Scoping Plan Reduction Measures

ARB Scoping Plan Reduction Measure	Project Consistency or Applicability
3 Energy Efficiency Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts.	Consistent with implementation of Mitigation Measure MM 5.2-I.6.
13 Green Building Strategy Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.	Consistent with implementation of Mitigation Measure MM 5.2-I.6.
16 Sustainable Forests Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation.	Not applicable. However, the project will integrate trees into the site design.
17 Water Continue efficiency programs and use cleaner energy sources to move water.	Consistent with implementation of Mitigation Measures MM 5.2-I.10 and MM 5.2-I.11.
15 Recycling and Waste Increase waste diversion, composting, and commercial recycling, and move toward zero-waste.	Consistent with implementation of Mitigation Measure MM 5.2-I.5.
Source of ARB Scoping Plan Reduction Measure: ARB 2008. Source of Project Consistency or Applicability: Michael Brandman Associates 2008	

Summary of Project Level Impacts

Even without mitigation, the construction and operation of the project would result in emissions well below the City of Newport Beach screening threshold for a potentially significant effect on greenhouse gas emissions of 1,600 metric tons of CO2e. Therefore the project would not hinder or delay California's ability to meet the reduction targets by 2020.

Cumulative Effects

Project greenhouse gas emissions are below the screening level that the City of Newport Beach has identified as having a potentially cumulatively considerable contribution to greenhouse gas emissions, therefore no further analysis is required.

Even a very large individual project does not generate enough greenhouse gas emissions to measurably influence global climate change. It is a project's incremental contribution combined with the cumulative increase of all other sources of greenhouse gases that together cause climate change impacts. However, the theory that an increase of one molecule of an air pollutant constitutes significant increase (one-molecule theory) should not be the basis of a de-facto significance threshold, as discussed in the decision for *Community for a Better Environment v. California Resources Agency* (103 Cal. App. 4th 98 (2002): "this does not mean, however, that any additional effect in a

nonattainment area for that effect necessarily creates a significant cumulative impact; the 'one [additional] molecule rule' is not the law."

While climate change is a global issue and each contribution of greenhouse gases may have a cumulative effect, there is no established methodology available to determine either the magnitude or the significance of the effect of an individual project on this global issue. As a result, the conclusions reached by any attempt to do so would be speculative. According to CEQA Guidelines 15145, "if, after thorough investigation, a Lead Agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate the discussion of the impact." The assessment of cumulative climate change impacts, which are project impacts plus all the other "cumulative" projects, is speculative for the following reasons:

- The list of cumulative projects for climate change is unknown, in that it could conceivably include all projects around the globe. Guidelines for establishing the radius for climate change have not yet been adopted. Without such guidelines, it is impossible to know how big the impact study area is supposed to be. For example, does the list of projects include those only within a one-mile radius of the project, or does it include projects within the entire air basin, or the state of California? For this reason, the "project list" approach for conducting a CEQA cumulative impacts analysis is not feasible.
- Large-scale assessments and emission reduction strategies must be formulated to evenly address greenhouse gas emissions on a regional level that includes land use patterns, energy generation and consumption, transportation, water transport, waste disposal, and the other major sources of greenhouse gas emissions. A region-specific plan would create the basis of a cumulative threshold and provide a platform for cumulative analysis on the project level. There is no approved plan that covers the jurisdiction of the project that discusses global climate change or greenhouse gases; therefore, the plan approach is not viable at this time. State and local agencies are currently developing strategies to reduce greenhouse gases in their jurisdictions; however, these strategies are not complete at this time.
- There are no adopted legal, regulatory, or advisory thresholds for measuring project or cumulative impacts of greenhouse gases.
- Available climate change models are not sensitive enough to be able to predict the effect of a single project on global temperatures and the resultant effect on climate; therefore, they cannot be used to evaluate the significance of a project's impact. Thus, insufficient information and predictive tools exist to assess whether a single project would result in a significant impact on global climate. For these reasons, determining the significance of the project's impact on global climate would involve undue speculation.

Mitigation Measures

As the project would result in a net increase in emissions well below the City of Newport Beach screening threshold for a potentially significant impact on greenhouse gases, no mitigation is necessary. Nonetheless, the project would include sustainable features.

Level of Significance After Mitigation

Less than significant.

Construction

Mitigation measures that improve the efficiency of construction would reduce emissions of carbon dioxide during construction from worker trips and construction equipment. It is anticipated that the reductions from Mitigation Measures MM 5.2-I.1 through MM 5.2-I.4 would reduce emissions of carbon dioxide from construction equipment and vehicles by at least five percent. The mitigation measures would not reduce emissions from the export of sand via tugboat. Unmitigated emissions equal approximately 567 $MTCO_2e$. Total reductions would result in a 4 percent reduction overall, lowering emissions to 541 $MTCO_2e$, as shown in **Table 5.2-16**. Feasible mitigation measures reduce the project's contribution of greenhouse gas emissions. Therefore, the emissions during construction would be less than significant.

Table 5.2-16: Construction Greenhouse Gas Emissions (Mitigated)

Phase	Carbon Dioxide Emissions (tons)	Emissions ($MTCO_2e$)
Phase 1		
Demolition	6	5
Mass grading	110	100
Phase 2		
Mass grading[1]	110	100
Phase 3		
Export of sand via tugboat	42	38
Trenching	13	12
Building	301	273
Fine grading	26	24
Asphalt paving	15	14
Architectural Coating	1	1
Subtotal Unmitigated	**624**	**567**
Mitigation Reduction (from Air Quality Mitigation)	**-29**	**- 26**
Total Mitigated Emissions	**595**	**541**

[1] It is assumed that grading and sod laying for Phase 2 would be similar to mass grading for Phase 1
Source: Michael Brandman Associates 2008. Sirius Environmental 2009

Operation

The proposed project incorporates a number of features and mitigation measures that would minimize greenhouse gas emissions to the maximum extent practicable. These features and mitigation measures are consistent with all applicable strategies identified by the ARB. Project design features/location, and the mitigation measures listed previously would reduce greenhouse gases.

Reductions to electricity and natural gas sources are estimated at 21 percent each, pursuant to Mitigation Measure MM 5.2-I.6. The reduction of water use through Mitigation Measures MM 5.2-I.10 and MM 5.2-I.11 could reduce water use by at least 10 percent. Mitigation Measure MM 5.2-I.8 combined with the project's location as infill development near existing transit corridors could reduce greenhouse gas emissions from motor vehicles by 5%. As shown in **Table 5.2-17**, after mitigation, operation of the proposed project would result in new emissions of approximately 580 $MTCO_2e$ per year, which is a 13 percent reduction from mitigation.

Table 5.2-17: Phase 3 Operational Greenhouse Gas Emissions (Mitigated)

Source	Metric tons of Carbon Dioxide Equivalents per year		
	Unmitigated	**Reduction (%)**	**Mitigated**
Water transport for building uses and landscaping	10	10	9
Indirect electricity	106	21	84
Natural gas	65	21	51
Refrigerants	276	0	276
Motor vehicles	1,000	5	950
Boats	257	0	257
Subtotal Project Emissions	1,714	-	1,627
Existing Land Use Emissions	-1,047	0	-1,047
Net New Emissions	**667**	13	**580**
Source: MBA 2008. Sirius Environmental, 2009			

The proposed project incorporates a number of features and mitigation measures that would minimize greenhouse gas emissions to the maximum extent practicable. These features and mitigation measures are consistent with all applicable strategies identified by the ARB. Moreover, given the project site's previous support of urban development and its proximity to surrounding development, the development of the project would be consistent with greenhouse gas emissions reduction strategies that emphasize reuse and redevelopment of developed or previously developed land uses. Additionally, the project would be providing recreational uses for the surrounding residents, which could reduce vehicle miles traveled for the residents. In addition, even before mitigation, the construction and operation of the project would result in emissions well below the City of Newport Beach screening threshold for a potentially significant effect on greenhouse gas emissions of 1,600 metric tons of CO2e. Therefore the project would not hinder or delay California's ability to meet the reduction targets by 2020.